

FIELD CHANGE REQUEST (FCR) FORM

Project Name: Arkema Project Area – PDI Phase 2 Project No.: CF167
Client: LSS/Retia USA Request No.: FCR-16

To: Madi Novak, EPA Date: March 25, 2022

Field Change Request Title: Riverbank Chemistry Soil Sampling with and Excavator.

Description:

Riverbank soil sampling was conducted at stations RH-3 through RH-40 in July 2021. Soil samples were analyzed sequentially using the riverbank soil sample analysis decision tree as a guide (Figure 3-2d of the Arkema Project Area Pre-Design Investigation (PDI) work plan). Remediation thresholds were exceeded in the deepest soil samples collected from some of the riverbank borings. Deeper soil sampling at these locations is needed to delineate the vertical extent of remediation threshold exceedances and Table 17 COCs remaining below the remediation threshold exceedances. Soil samples deeper than approximately 4 ft cannot be collected using hand tools because of large concrete fragments and other material in riverbank soil in some parts of the Arkema Project Area. Also, refusal occurred in some of the hand auger borings before reaching the target depth of 4 ft below ground surface (bgs) due to debris in the soil. Another sample collection method will be required to collect deeper soil samples.

Recommended Change:

Riverbank soil stations with remediation threshold exceedances that are accessible to an excavator will be reoccupied and sampled using an excavator as deep as practicable, up to approximately 10-15 ft bgs. The stations proposed for sampling with an excavator are shown on attached Figures 1 and 2. The excavator bucket size will be on the order of 0.5 to 1.0 cubic yard. An excavator is well suited for the soil sampling because large concrete and other refusal material can be removed from the test pit during the excavation work.

The soil sampling will follow the protocols used for the riverbank soil hand auger borings (Section 4.5.1 of the Field Sampling Plan (FSP), Appendix A to the PDI Work Plan) and the excavation procedures will follow the procedures for the test pit explorations (Section 4.5.2 of the FSP), with the following modifications. The excavator bucket will be decontaminated between stations using a pressure washer with potable water. The decontamination rinsate will be discharged to the ground surface near each test pit location. The surface soil (top 0.5 to 1 ft) and associated vegetation will be carefully removed from the test pit and placed on a separate piece of visqueen intact so it can be replaced at the top of the test pit after the sampling has been completed. An assessment of invasive plants will not be conducted as part of this investigation. Soil samples will be collected directly from the excavator bucket; personnel will not enter the excavations for health and safety reasons. Soil will be collected for each 1-ft interval by carefully scooping the soil to avoid sloughing within the bucket. Intact and relatively undisturbed buckets of soil that are representative of the 1-ft sample interval will be considered to be acceptable samples. Care will be taken to collect the soil samples from the interior portion of the bucket to minimize cross-contamination. Soil samples will be collected every foot starting at the bottom of the reoccupied RH boring (generally 4 ft bgs). The soil in the test pit will be photo-documented every foot using a

digital camera from the ground surface near the excavation. The soil will also be photographed in the excavator bucket.

All excavated soil will be segregated by depth (approximately every 4 ft) on visqueen and returned to the test pits immediately after soil sampling activities are completed or at the end of the day, whichever comes first. The soil from the deeper portion of the test pit will be returned to the test pit first. The soil will be compacted with the bucket as the soil is returned to the excavation. The compacted soil will be brought up to 0.5 to 1 ft below ground surface and leveled out to prevent future tripping hazards. The surface soil (0.5- to 1-ft thick) with vegetation that was placed on a separate piece of visqueen will be carefully returned to the top of the test pit with the vegetation intact to limit future erosion from wind or rain. The boundaries of the test pit will be marked with stakes and DGPS coordinates will be collected in accordance with Section 4.2 of the FSP (Appendix A to the PDI Work Plan).

		<u>March 25, 2022</u>
Field Operations Lead (or designee)	Signature	Date

Approval:

<u>Eron Dodak</u>		<u>March 25, 2022</u>
Project Manager	Signature	Date

<u>Madi Novak</u>		<u>3/28/22</u>
EPA Remedial Project Manager	Signature	Date

Distribution:

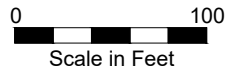
LSS Project Coordinator
Integral Project Manager
Field Operations Lead
QA Officer

Project File

Other:



PLOT TIME: 3/23/2022 9:27 AM MOD TIME: 3/23/2022 9:26 AM USER: Lee Barras DWG: P:\ARKEMA RM7\Caol\Figures\2022-03\2022-03-23 Proposed Shoreline and TPIs.dwg



LEGEND:

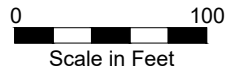
- GTP-x** TEST PIT (PROPOSED)
- GTP-x** TEST PIT (ORIGINAL LOCATION)
- RH-xx** SHORELINE BORING - FOR ADDITIONAL CHEMISTRY SAMPLING USING EXCAVATOR
- SLURRY WALL

NOTES:

- 1. The horizontal coordinate system for the project is based on NAD83/2011 Oregon State Plane, North Zone, International Foot.
- 2. Background Image source: GoogleEarth 2021.

ARKEMA RM7 PORTLAND		<div><div>DOF</div><div>DALTON OLMSTED FUGLEVAND</div></div>	
PROPOSED TEST PIT LOCATIONS			<div>FIGURE 1</div> <div>March 23, 2022</div>

PLOT TIME: 3/23/2022 9:27 AM MOD TIME: 3/23/2022 9:26 AM USER: Lee Barras DWG: P:\ARKEMA RM7\Caol\Figures\2022-03\2022-03-23 Proposed Shoreline and TPIs.dwg



LEGEND:

●RH-xx SHORELINE BORING - FOR ADDITIONAL CHEMISTRY SAMPLING USING EXCAVATOR

NOTES:

- 1. The horizontal coordinate system for the project is based on NAD83/2011 Oregon State Plane, North Zone, International Foot.
- 2. Background Image source: GoogleEarth 2021.

ARKEMA RM7 PORTLAND		
ADDITIONAL SHORELINE BORING SAMPLING		
		FIGURE 2 March 23, 2022